

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1-9. (canceled).

10. (previously presented): An automatic programming method of selecting workpiece data from a workpiece database in which a material, a shape, and a dimension of a workpiece are registered, creating a workpiece model for lathe turning based on the selected workpiece data, and creating a program for controlling a numerical control device based on a product model for lathe turning and the created workpiece model, the automatic programming method comprising:

workpiece selecting including

selecting workpiece data involving a product shape and having a smallest diameter for lathe turning around a turning axis from the workpiece database, by comparing dimension data of the workpiece data with dimension data of the product model in a state in which the product model is arranged on the turning axis and the workpiece data is arranged so that a center axis of each workpiece matches a center of the turning axis; and

selecting, when there is a plurality of workpiece data involving the product shape and having the smallest diameter for lathe turning around the turning axis, workpiece data having a length equal to or longer than the product shape and a shortest length; and

creating the workpiece model for lathe turning based on the selected workpiece data.

11. (previously presented): The automatic programming method according to claim 10, wherein

a shape of the workpiece is a round bar, and

the workpiece selecting further includes

obtaining a longest distance between the turning axis and a fringe area of the product model; and

selecting a round-bar work having a radius equal to or longer than the longest distance and a smallest diameter.

12. (previously presented): The automatic programming method according to claim 10, wherein

a shape of the workpiece is a polygonal bar, and

the workpiece selecting further includes

obtaining respective distances between line segments parallel to respective fringes of the polygonal bar and tangent to the product model and the turning axis;

obtaining a maximum value from among the obtained distances; and

selecting a polygonal work model having an opposite side distance equal to or larger than twice of the obtained maximum value and a shortest opposite side distance.

13. (previously presented): The automatic programming method according to claim 10, wherein

the workpiece selecting further includes

displaying the workpiece data registered in the workpiece database in a list; and

highlighting minimum workpiece data from among the workpiece data displayed in the list.

14. (currently amended): The automatic programming method according to claim 10, wherein

the workpiece selecting further includes

displaying workpiece data involving a product shape ~~is~~ in a list from the

workpiece database in an increasing order of cutting amount; and

highlighting minimum workpiece data from among the workpiece data displayed in the list.

15. (previously presented): A computer-readable recording medium that stores a computer program for selecting workpiece data from a workpiece database in which a material, a shape, and a dimension of a workpiece are registered, creating a workpiece model for lathe turning based on the selected workpiece data, and creating a program for controlling a numerical control device based on a product model for lathe turning and the created workpiece model, wherein the computer program causes a computer to execute:

workpiece selecting including

selecting workpiece data involving a product shape and having a smallest diameter for lathe turning around a turning axis from the workpiece database, by comparing dimension data of the workpiece data with dimension data of the product model in a state in which the product model is arranged on the turning axis and the workpiece data is arranged so that a center axis of each workpiece matches a center of the turning axis; and

selecting, when there is a plurality of workpiece data involving the product shape and having the smallest diameter for lathe turning around the turning axis, workpiece data having a length equal to or longer than the product shape and a shortest length; and

creating the workpiece model for lathe turning based on the selected workpiece data

16. (currently amended): An automatic programming apparatus for selecting workpiece data from a workpiece database in which a material, a shape, and a dimension of a workpiece are registered, creating a workpiece model for lathe turning based on the selected workpiece data, and creating a program for controlling a numerical control device based on a product model for

lathe turning and the created workpiece model, the automatic programming apparatus comprising:

a memory;

a processor;

a workpiece selecting unit that selects workpiece data involving a product shape and having a smallest diameter for lathe turning around a turning axis from the workpiece database, by comparing dimension data of the workpiece data with dimension data of the product model in a state in which the product model is arranged on the turning axis and the workpiece data is arranged so that a center axis of each workpiece matches a center of the turning axis, and when there is a plurality of workpiece data involving the product shape and having the smallest diameter for lathe turning around the turning axis, selects workpiece data having a length equal to or longer than the product shape and a shortest length; and

a workpiece-model creating unit that creates the workpiece model for lathe turning based on the selected workpiece data,

wherein the memory stores the workpiece selecting unit and the workpiece-model creating unit.

17. (previously presented): The automatic programming apparatus according to claim 16, wherein

a shape of the workpiece is a round bar, and

the workpiece selecting unit obtains a longest distance between the turning axis and a fringe area of the product model, and selects a round-bar work having a radius equal to or longer than the longest distance and a smallest diameter.

18. (previously presented): The automatic programming apparatus according to claim 16,

wherein

a shape of the workpiece is a polygonal bar, and

the workpiece selecting unit obtains respective distances between line segments parallel to respective fringes of the polygonal bar and tangent to the product model and the turning axis, obtains a maximum value from among the obtained distances, and selects a polygonal work model having an opposite side distance equal to or larger than twice of the obtained maximum value and a shortest opposite side distance.

19. (previously presented): The automatic programming apparatus according to claim 16, wherein

the workpiece selecting unit displays the workpiece data registered in the workpiece database in a list, and highlights minimum workpiece data from among the workpiece data displayed in the list.

20. (currently amended): The automatic programming apparatus according to claim 16, wherein

the workpiece selecting unit displays workpiece data involving a product shape is in a list from the workpiece database in an increasing order of cutting amount, and highlights minimum workpiece data from among the workpiece data displayed in the list.

21. (previously presented): The automatic programming method according to claim 10, wherein

a workpiece selecting unit automatically performs the workpiece selecting; and

the workpiece selecting unit communicates the selected workpiece data to a workpiece-model creating unit.

22. (previously presented): The automatic programming method according to claim 21,
wherein

the workpiece model created by the workpiece-model creating unit is stored in a memory.

23. (previously presented): The automatic programming method according to claim 10,
wherein

the created workpiece model is stored in a memory.

24. (previously presented): The automatic programming method according to claim 10,
further comprising:

generating machine code based on the created workpiece model; and

outputting the machine code from a programming apparatus to a numeric controller.

25. (previously presented): The automatic programming method according to claim 24,
further comprising:

the numeric controller executing the machine code transmitted from the programming
apparatus.